

Amendments to the Claims:

Please cancel claim 7 and amend claims 1, 2, 9, 11, and 14-19 as follows.

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) An optical instrument comprising:
a transmitter that emits an optical signal;
a reflector assembly which directs said optical signal onto a specimen;
a detector assembly which detects ~~a reflected~~ an optical signal emitted from the specimen;
an objective disposed to intercept said optical signal and said reflected optical signal;
a first drive mechanism supporting said objective for varying the position of said optical signal on the specimen by moving said objective relative to the specimen; and
a second drive mechanism for varying the position of the specimen relative to said optical signal by moving the specimen.
2. (Currently amended) The optical instrument of claim 1, wherein said reflector assembly directs said optical signal along a first path onto the specimen and directs said ~~reflected~~ emitted optical signal along a second path to said detector, said first path and said second path having a common path segment.
3. (Original) The optical instrument of claim 2, further comprising a beam splitting mirror having an opening, said beam splitting mirror defining one end of said common path segment.
4. (Original) The optical instrument of claim 3, wherein said first path and said second path approach said beam splitting mirror from a first direction and a second direction respectively.

5. (Original) The optical instrument of claim 4, wherein said beam splitting mirror allows passage of said first path through said opening and reflects said second path.

6. (Original) The optical instrument of claim 1, wherein said second drive mechanism moves the specimen in a linear manner.

7. (Canceled).

8. (Original) The optical instrument of claim 1, wherein said first drive mechanism moves said optical signal substantially perpendicular to movement of the specimen.

9. (Currently amended) The optical instrument of claim 1, wherein said ~~first drive mechanism includes a scanning objective is a refractive lens to focus said optical signal onto the specimen.~~

10. (Original) The optical instrument of claim 1, wherein said first drive mechanism includes a galvanometric torque motor.

11. (Currently amended) An optical instrument comprising:
a transmitter that emits an optical signal;
a beam splitting mirror having an opening;
a reflector assembly which directs said optical signal along a first path passing through said opening and onto a specimen;
a detector assembly which detects ~~a reflected~~ an optical signal emitted from the specimen, said reflected optical signal defining a second path directed by said beam splitting mirror;
a first drive mechanism including a scanning lens for varying the position of said optical signal on the specimen by moving said lens relative to the specimen; and
a second drive mechanism for varying the position of the specimen relative to said optical signal by moving the specimen.

12. (Original) The optical instrument of claim 11, wherein said transmitter includes a plurality of lasers having optical signal of different wavelengths.

13. (Original) The optical instrument of claim 12, further comprising a dichroic beam combiner to combine said plurality of optical signals along said first path.

14. (Currently amended) The optical instrument of claim 11, wherein said first drive mechanism includes:

a galvanometric torque motor having a sector shaped cam;
a carriage;
a retainer to fixedly hold a specimen said lens to said carriage; and
a first and second wire attached between said cam and said carriage, whereby rotation of said cam is translated into linear movement of the specimen said lens.

15. (Currently amended) The optical instrument of claim 11, wherein said second drive mechanism includes:

a precision stepper motor having a screw;
a carriage having a nut engaging said screw;
a retainer to fixedly hold a specimen to said carriage; and
said stepper motor operable to rotate said screw, whereby rotation of said screw is translated into linear movement of the specimen.

16. (Currently amended) A method of a scanning fluorescent samples sample comprising the steps of:

(a)—exciting the samples sample with an a first optical signal of a known first wavelength;
(b)—detecting an a second optical signal of a second wavelength;
interposing an objective in a path of said first optical signal prior to said first optical signal reaching the sample;

(e) translating said objective relative to the sample so as to translate said first optical signal in a first and second direction; and

(d) translating the sample in a third direction substantially perpendicular to said first and said second direction.

17. (Currently amended) A method as recited in claim 16, wherein step (a) further comprises and further comprising combining said first optical signal with one or more additional a plurality of optical signals prior to exciting of the sample.

18. (Currently amended) A method as recited in claim 16, wherein step (b) further comprises and further comprising splitting said second optical signal into a plurality of optical signals prior to detecting.

19. (Currently amended) A method as recited in claim 16, wherein a portion of said exciting first optical signal and a portion of said detecting second optical signal have a common path.